



# Theme 1 - Knowledge clips: educational use of video messages



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## Structure of this theme

- Knowledge clips about the theme 'knowledge clips'
- Learning objectives
- What are we taking about?
- Empirical research about the impact of knowledge clips and design guidelines
- Studentes making their own videoclips: an alternative approach
- Take care: privacy!
- Technical tools
- The task in line with this theme
- Planning
- References

## Watch the following clips about clips over kennisclips

Let's first get inspired by wachting some knowledge clips. Take care! The terminology varies from knowledge clips to learning clips, educational video use ... and knowledge clips.

## Instructional Video Creation: 4 Key Elements



And also watch this example to learn about Photosynthesis

## Photosynthesis



You observe how much there is to be learned to end up with an adequate and successful knowledge clip.

### Learning objectives



### Learning objectives

After studying this theme, you master the following learning objectives:

- Choosing to develop knowledge clips is based on the choice of learning objectives.
- Be able to assess an existing knowledge clip on the basis of technical and functional criteria.
- Design and implement your own knowledge clip and immediately indicate its strengths and weaknesses.

### What are we talking about?



Especially due to the Covid 19 pandemic, video clips have very quickly become a key ingredient of online higher education. A variety of types of video uses are observed:

- streaming video
- full lesson recordings
- knowledge clips

Today we specifically address the latter category: 'knowledge clips'. They have a specific purpose and that is why they are worked out in a specific way. The label 'knowledge clip' immediately indicates what their goal is: trying to achieve a specific learning objective briefly and to the point. The word 'short' "should be taken literally. The guideline is that a knowledge clip lasts a maximum of 10 minutes. The starting point is a very well-defined learning objective. Anyone who wants to develop a knowledge clip therefore first and foremost aligns this learning objective well, collects all information, supporting materials, writes a script and gets started with video recording software.

Empirical evidence of using knowledge clips and design guidelines have an impact: empirical evidence

## Defining design guidelines

### Version 1 of general knowledge clip

The definition of design guidelines for knowledge clips (design guidelines)

Work out a first list of ideas for design guidelines; you can also formulate

1. ....

2. ....

3. ....

We developed a second version of the same knowledge clip. Check out

### Version 2 of general knowledge clip

4. ....

5. ....

6. ....

What do we learn from empirical research about video clips in terms of design guidelines?

The literature and research focusing on video clips / knowledge clips in instructional settings usually reports positive effects. But it is good to emphasize that those effects are not always positive. Much depends on the integration of the video clips in the broader context of the instructional process. Preradovic and colleagues (2020) therefore

emphasize two important design features that are related to this emphasis onto integration: "preview the task" and "strengthen the demonstration with practice". So, it is recommended that before viewing the video clip / knowledge clip, there are guarantees that students master the prior knowledge that is presupposed when viewing the clip. Second, a clip cannot and should not stand alone. After watching the video clip, students get to work building on the knowledge they have experienced are have been introduced to.

Research about video clips is not a discussion about yes / no. The research mainly helps to understand why the use of video has an effect and which design decisions have the strongest effect. For inspiration we give a recent study in which the most popular instructional videos - found on Youtube - were analyzed.

#### Applied Research

## Like It or Not. What Characterizes You' More Popular Instructional Videos?

Petra ten Hove and Hans van der Meij

### Abstract

**Purpose:** There is a tremendous growth in the production of instructional video. This study investigates whether popular YouTube instructional videos for declarative knowledge development differ in their physical characteristics from unpopular and average

Ten Hove and Van der Meij (tenHovevanderMeij2015.pdf) set up a study in which 250 popular video clips were analyzed. This research is about knowledge clips related to declarative knowledge. So, this is knowledge that is conceptual, factual and not related to procedures, approaches, processes.

The research results indicate that the most popular clips exhibit the following

- The clip's technical resolution is high. Students see things in sufficient detail, the image is sharp. Of course, a higher resolution will burden the download speed of the video clip, but developers usually assume a minimum resolution of High Definition (nowadays referred to as HD 1080)

- Static images are added to the video clip. it may sound contradictory but adding a picture to the video just-in-time (spatial and temporal contiguity) enhances the learning effect. The researchers distinguish two types of static additions: iconic pictures (schematic pictures, structures derived from a real image. But also pictures of reality. Second, there are analytic pictures. These are pictures that represent diagrams, graphs, maps, patterns ... It is a more abstract image that integrates a lot of information.
- Dynamic figures are added. These can be realistic representations of a process course; but in addition these can be animations (see theme 6). Are you talking about e.g., glaciers and their shifting; then it is obvious that you represent the 'shifting' dynamically. You will find other examples e.g., in cell division: mitosis, meiosis ... these are abstract concepts that you understand better when you see a dynamic image, after, for example, a static image. Many abstract concepts include processes that a student cannot properly 'imagine'. providing images thus reinforces the imagery.
- There is a good variety of titles, sound and voices. Text is thus displayed, and the text is spoken. Spoken text is appreciated, but beware! What is 'said' does not have to be literally displayed as text (redundancy). The extra addition of music (e.g., intro) and sounds (e.g., a woesshh sound when a figure appears); does not appear to contribute to popularity and impact. Be careful with those extra sounds and be sure to be careful with background sounds that do not underscore the focus of the video clip. When adding music then "music should not compete with the spoken message".
- Pace: a striking result is that the pace, tempo in popular videos is quite high.

Moussiades and colleagues' 2019), based on a theoretical and empiri

- Be brief yet inclusive.
- Use conversational style.
- Pay attention to the aesthetics of the video.

- Control the rate of speech in regards to fast or slow as it is considered that student engagement increases proportionally to speaking rate.
- Define the target audience.
- Don't overload video frames with text.
- Use narration.
- Provide Images that are uncluttered and simple.
- Synchronize audio and visual messages.
- Support variety.
- Control the pace.
- Follow the signalling principle.
- Provide introductory notes or knowledge background related to the content.
- Organize video in sections.
- Use captions.

In the following study, the emphasis is much more on the acquisition of procedural knowledge; knowledge with regard to processes, approaches, step-by-step plans, procedures ... This is of course a different kind of sport, because the emphasis is on providing multi-sensory support of more complex knowledge. Consider, for example, learning the position on a cello, performing a triple jump, learning salsa, performing a mathematical calculation, carrying out the titration procedure, developing a text ...

We know that tackling procedural knowledge implies a great deal of declarative knowledge is sufficiently mastered. How could you – otherwise - take into account specific facts, concepts, relationships, theories in the learning process about procedures. This immediately produces the first draft guideline: is a sufficient level of prior knowledge available and/or is the necessary prior knowledge sufficiently refreshed before the instructional video focuses on the procedural knowledge? Erikson & Erikson (2019) also put forward a lot of practical guidelines; it is striking how they emphasize the core

of this type of instructional videos: "how to".



## Technical Communication Quar

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# Live-action Communication Design How-To Video Case Study

Per Erik Eriksson & Yvonne Eriksson

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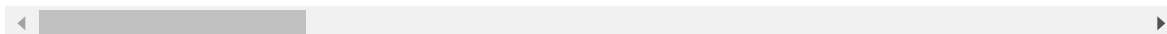
It is striking that the authors rightly emphasize in their research that there are few evidence-based approaches for developing these types of video clips. As a result, a lot of available instructional material is of inferior quality. The authors base their particular approach on available research evidence and integrate this into a broader working framework. They summarize the characteristics of live-action instructional video clips as follows:

- **Visibility:** in other words, has everything been made sufficiently 'visible' with the video. First of all, this means that attention was paid to aspects of light, resolution ... play a role. But even more important is the completeness of a recording. For instance, in pole vaulting, you also have a clear introduction to walking up, holding the pole, ... When playing the violin, attention is needed for posture, holding the bow, position of the fingers, ... And



sometimes, as a developer of the video clip, you run up against the limits of what can be made "visible". For example, if you emphasize the pronunciation of a word in a Spanish pronunciation exercise, you will have to take extra time from a variation in the examples (man and woman sometimes voicing differently).

- **Recordability:** this refers to the extent to which the entire process can be included. This often requires additional material to be added after the actual recording in order to map all aspects of a process, procedure, competence; by eg; adding arrows, frames, text, replaying part of the recording ... The researchers immediately emphasize the criterion 'Verifiability'. This refers to the authenticity of the experiences shown: the setting, the equipment used, the accessibility for the student to the tools, instruments, materials ... supported between the demonstrated action by an expert, teacher ... and the action performed the student has to perform. pay attention to the position, sequence, feasibility of the actions.
- **Comparability:** what a student ultimately does, is it in line with what should have been done. Consider, for example, the quality of a melody that is predicted in the instruction video: isn't it too fast? Isn't it played on an instrument that exceeds the quality of a student's instrument too much? Is the pace achievable; was it sufficiently divided into small sections before the full melody was expected to be performed?

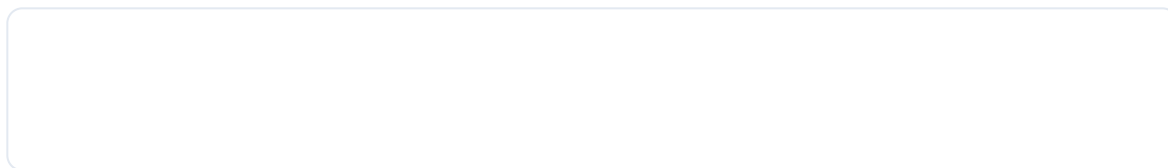


**Privacy: take care!**



**Pay attention! Privacy and copyright**

When you film/record people and they can be recognized or identified: did they give permission? Have parents or guardians consented to the filming of minors? Have you respected the copyright of photos, texts, animations, images, ... Respecting copyright starts with explicitly mentioning the source and can also go further; e.g., that you have paid for their use. Much depends on how your end product will be distributed and whether or not it will be commercially exploited. For example, the photos in the header of this course have been downloaded from iStock and fees have been paid for them in the context of use for educational applications. You can of course be flexible with these rules when tackling the task related to this professional development course, but be careful with the distribution of your end product. When you start distributing or start giving access to the product to other people, you need to follow the applicable regulations. Of course, uploading your final product in the context of this course is not a problem, as long as the material is not used outside the context of the course. There are many websites with audiovisual material that you can use copyright free (provided the source is mentioned at the end of the recording).



### Students making their own videoclip: an alternative approach



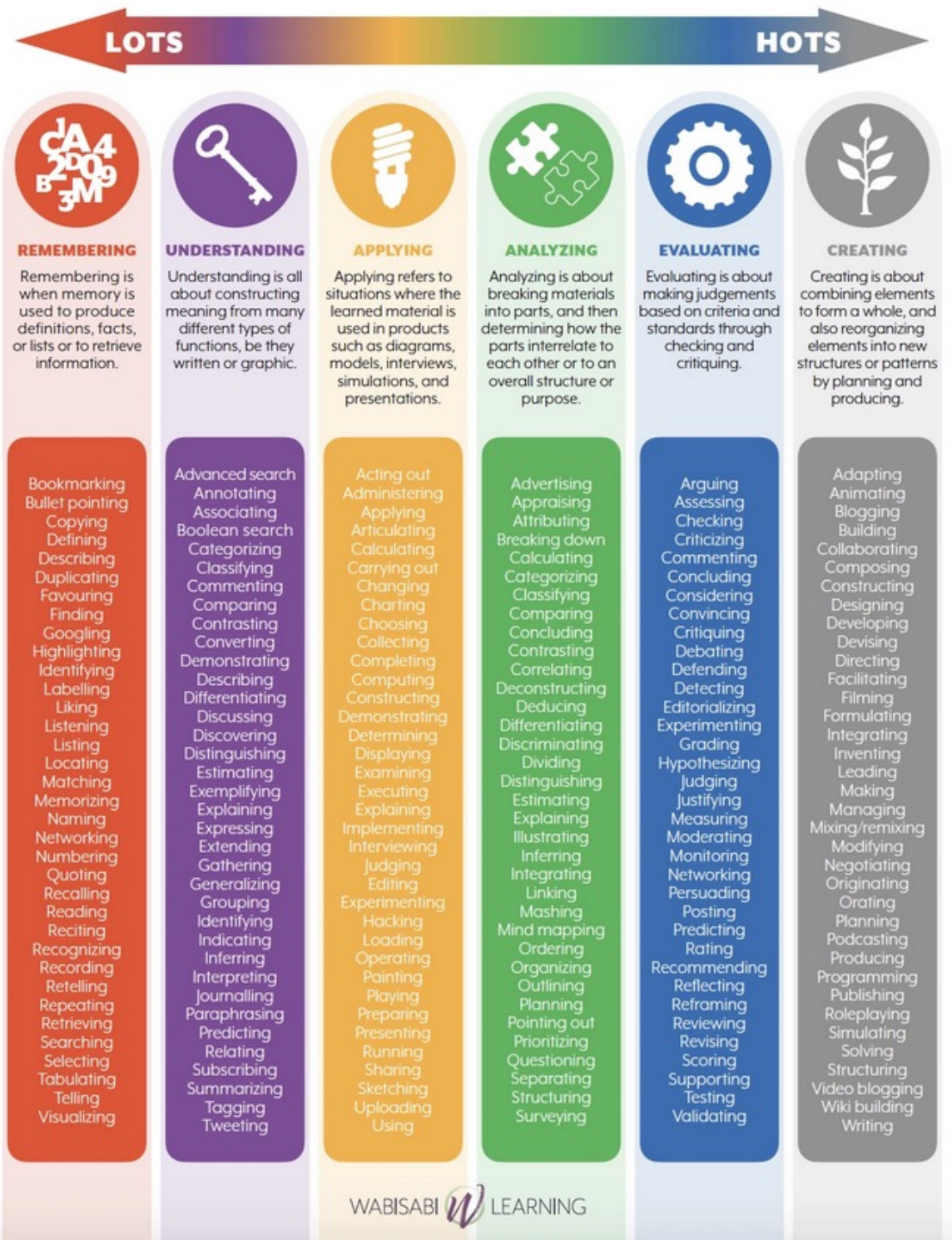
It sounds a bit strange in the context of this theme, but why not ask our students themselves to develop a video clip when tackling a task, assignment, question. Such a video clips will show in a dynamic way what students can do. And you have the advantage that you immediately see the students themselves at work in a reading assignment, an explanation, a music performance ... But, this is actually not so strange. If you look at Bloom's taxonomy in terms of

learning objectives, you realize that many learning objectives cannot be tested or pursued on paper, or without a strong form of interaction. How can students demonstrate that they can create something (e.g., perform a piece of music, independently develop a piece of evidence for an assignment, elaborate a text, ...) or approach a task at the evaluation level (e.g. conduct an experiment, give an assessment in a work of art, checking a solution of a chemical reaction ...), or proving that they can analyze something (e.g. comparing two economic systems, describing links between climate and economy ...). Of course, this can be done on paper, but when students work this out with video, you get to see a much more powerful, personal and complete effect. Moreover, we know - from experience - that students prepare, repeat, re-record this several times and ultimately submit their "best" work. For example, a music teacher used this to practice pieces of music. The first part of the next lesson was to view the student's "best" recording. In this way, giving feedback takes place in a much more structured, systematic way and with respect for the actual control of the learning objective. We do not elaborate this approach in this theme; but be sure to take this into your own teaching practice as a basis for evaluating student learning or as an instructional approach in class.

# BLOOM'S DIGITAL TAXONOMY VERBS

Bloom's Digital Taxonomy is about using technology and digital tools to facilitate learning. This kind of student engagement is defined with power verbs that can be used for everything from lesson planning and rubric making, to doing curriculum mapping and more.

You can use these verbs which cover the span of the taxonomy from LOTS (lower-order thinking skills) to HOTS (higher-order thinking skills). It begins with *Remembering* and ends with *Creating*. Listed beneath are the power verbs that apply to each stage.



(source: <https://wabisabilearning.com/blogs/literacy-numeracy/download-blooms-digital-taxonomy-verbs-poster>).

## Tools



We can distinguish between two types of tools:

1. Tools designed for developing instructional videoclips. You can explore for instance:





# 15 Tools for Teaching With Video

By [Richard Byrne](#)

A good video clip can spark discussion, reinforce a key concept, or introduce students to an entirely new topic. Just showing a video or telling students to watch a video usually isn't enough direction to make the video meaningful. That is particularly true if the video is more than a few minutes long. Here are fifteen tools to use the next time you're planning to use a video in your classroom.

## Video Discussion Tools

[Vynchronize](#) lets you create an online room in which you can watch a video while chatting about it with other viewers at the same time. To use [Vynchronize](#) just go to the site, enter your name, and pick a name for your chat room. As soon as you do that your chat room will be launched and you can invite others to join by giving them the URL assigned to your room. Within your room you can play videos from YouTube and Vimeo. To play a video just copy its URL from YouTube or Vimeo and then paste it into the video queue. Chat about the video happens in a side panel on the same page. You can pause, rewind, and fast-forward the video just like you can on YouTube or Vimeo.

[ClassHook](#) has a feature called Pause Prompts that is perfect for in-classroom discussion of video clips. Pause Prompts are short questions or discussion prompts that you build into the video clips that you plan to display in your classroom. When you play a video in your classroom the video will

(see <https://practicaledtech.com/2019/03/03/15-tools-for-teaching-with-video/>)

## 2. General video editing tools.

In this category you will find many professional tools with which you can develop advanced applications. Today, the tools are so user-friendly and there is so much accompanying instructional material available that this is certainly within reach of teachers. For example, one can use Camtasia, others use iVideo, Moviemaker, Pinnacle, ... or one of the tools recommended to you through the many sites on this subject; see eg. <https://global.techradar.com/en-gb/news/beste-premium-free-video-editor>

We ourselves use Camtasia. You can use that tool for free for 30 days. But almost all tools ultimately have the same functionalities.

Sometimes there is even decent software on your smartphone. Many students ask the question: but don't you need expensive recording equipment? No, most inexpensive cameras and even a lot of smartphones (resolution HD 1082) are already capable of recording very good quality video. That video recording immediately forms the basis for your end product. Only pay attention to the sound quality, you quickly have noise, wind, background noise. That is why purchasing a simple extra microphone immediately has added value.

# Camtasia®

[Overview](#)[Features](#)[Teams](#)[Upgrade](#)[Pricing](#)[Maintenance](#)

The Best All-In-One

## Screen Recorder and Video Editor

Camtasia 2020 makes it simple to record and create professional-looking videos on Windows and Mac.

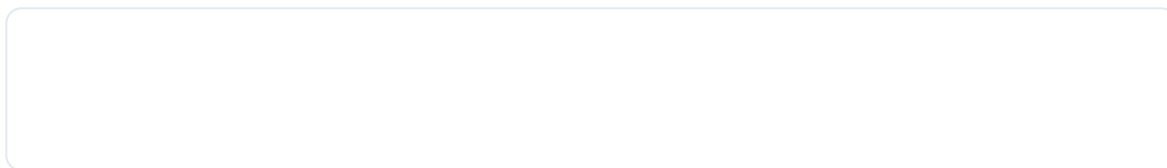
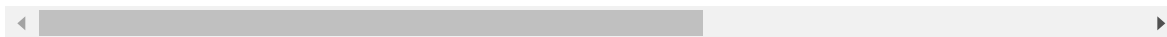
[Download Free Trial](#)

★★★★★ 4.3

Over 24 million people use Camtasia to create videos



(see <https://www.techsmith.com/video-editor.html>).



Assignment in view of this theme



1. Choose a learning objective that matches your university course program. Build on courses you currently tackle; this makes you well acquainted with the objectives you want to pursue.

2. Develop a scenario in which you pay attention to the following:

- the learning objective for which you develop this knowledge clip.
- the setting where your recording will take place; not everything can be recorded in whatever space; move away from your desktop or office space; choose a physics lab, a city location, a museum, a library, a music studio ...
- collect additional materials (visual, auditory) that will help you enrich the basic video recording; that can be other video clips; photos, diagrams, figures, tables, text balloons, screenshots, music recordings ...
- Write a scenario in which you enrich the baseline text with the other materials (insert image x here; insert scheme y here, stop here and show the demo for 5 seconds ...
- make your basic recording of your 'story'.
- now edit your basic recording by adding the additional materials: music, intro, intermediate slides, text balloons
- create a 'finished product', but check the quality of your product by applying the checklist (see below) to see whether you checked all the boxed in this checklist. If needed and obvious, adjust things immediately. Regarding technical specifications, we ask you to finish the final product as an MP4 file. Most video editing tools use this as a standard output format.
- upload your end product in the locker of your own group in the online UFORA course.



## Checklist to evaluate the knowledge clip assignment



In the final stages of this theme-related task, we evaluate each others work on the base of a checklist. In view of this theme, we use the following format: [Feedback\\_knowledge\\_clip.doc](#)



Criterion	Feedback	Feed Fo
	Colleague giving feedl	
Is attention paid to stating a very clear and operational learning objective beforehand?		
Is there a clear introductory phase that helps activating prior knowledge in the students? Has the videoclip been positioned within a broader learning trajectory?		
Toi what extent is attention paid to the target audience (fit for this age group and level, address, tone, language usage, direct addressing the audience ...).		
Has the videoclip been split up into sections that can be processed adequately to attain the learning objective?		
Is sufficient attention paid to a multi-media elaboration (extra multi-media representations based on video, static/dynamic graphics, text, music, sounds ...).		
Pace		
Visibility		
Recordability		
Comparability		
Copyright and privacy		

(Screenprint of the feedback form)

In view of the subsequent session, you will work independently and apply the checklist to provide feedback to the work of one of your

colleagues in your group. You do this before the start of the weekend. You upload your feedback form in the locker of your own group and you adapt the name of the file you upload as follows: "FB\_Your\_name\_name\_of\_colleague.doc".

4. After the weekend, the colleague who received your feedback will read the feedback form and start filling out the last column in the form. In this column, the colleague responds to the feedback received and the feed forward information. Upload this Feedback to the feedback in the locker of your group and use the following file name **"FBFB\_name of colleague who\_reacts\_to\_FB\_Name of colleague who gave FB.doc"**

Who gives feedback to whom? Simply look at the order in the names in your group of 5 colleagues. Colleague A gives feedback to B, colleague B to C, colleague C to D, colleague D to E and colleague E to colleague A.

Download the feedback form here: [Feedback\\_knowledgeclip.docx](#)



## Planning



**- Deadline to upload your knowledge clip: Monday March 1st (before 24:00)**

If you upload a videofile, use a well-known format (e.g., MP4) and be clear about the label of the file. Always use your family name and initial; e.g., Video\_Valcke\_M.MP4

In case you developed something that can be viewed via Youtube, you can upload a word document that contains the link to the videoclip. Again, respect the label of this file: Video\_Valcke\_M.doc

- Deadline to upload your feedback and feed forward for one colleague:  
**Thursday March 4th (before 24:00)**

Upload your file that is based on the rubric we provided in the learning path:

[Feedback\\_knowledgeclip.docx](#)

After filling out the feedback and feed forward ino, save the file and upload it in the locker of your group. Please pay attention to the label of the file:  
xxx\_to\_yyy\_knowledgeclip.doc

xxx is your name

yyy is the name of your colleague

- Deadline for uploading your feedback to the feedback having received: **Sunday March 7th (before 24:00)**

Reuse the file that was uploaded by your colleague in the locker of your group.  
BUT, rename the file

to

yyy\_to\_xxx\_FFBFB\_knowledgeclip.doc

xxx is your name

yyy is the name of your colleague

References



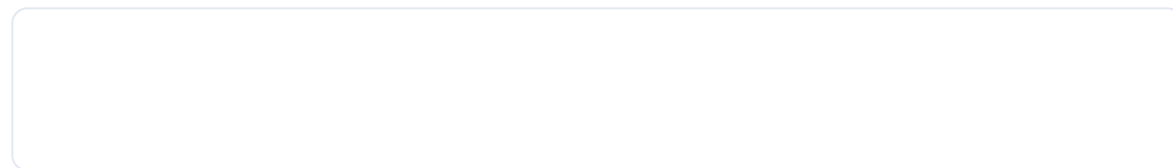
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### Nice examples from our group



To give you an impression of the work we did by the end of our two week's activities; this is a showcase for others:

-

0:00 / 2:07